Highway 99 Corridor Plan

Concept Design Report

CRP #351022

Prepared for:
Clark County Public Works

January 2006

In association with
DKS Associates

Acknowledgements

Clark County Public Works
Linda Small, *Project Manager*
Heath Henderson, *Environmental/Engineering*
Mike Mabrey, *Long-Range Planning/CD*
Susan Wilson, *Program Management*
Christopher White, *Project Management Assistant*
Laura Henry Slye, *Traffic/Transportation*
John Milne, *Design Section*
Rob Klug, *Traffic Engineering*
Lowell Weiss. *Real Property Services*

Vancouver-Clark Parks & Recreation
Kelly Punteney, *Trails and Greenway Development*

Otak
Tom Walsh, *Project Principal*
Tom Litster, *Project Manager*
Pam Wiedemann, *Project Engineer*
Tim Kraft, *Water & Natural Resources*
Kris Souza, *Project Assistant*

DKS Associates
Peter Coffey, *Traffic Engineering*
Colette Snuffin, *Traffic Engineering*

NW Natural – Clark County Office
Gary Nault, *Engineering Tech*

Clark Public Utilities/Electric/Water
Dale Mickelson, *Associate Design Engineer*
Russ Knutson, *Civil Engineer*
Cal Morris, *Manager of Construction Design*

Qwest Communications
Ron Imai, *Engineer*

Comcast Cable Communications, Inc.
Michelle Janson, *Construction Coordinator*

Hazel Dell Sewer District
Tom Sedlacek, *GIS Specialist II*

Electric Light Wave, Inc.
Robert Davidson, *Outside Plant Engineer*

Team 99
Brad Lothspeich, *Chair*
Ila Stanek**,** *Secretary*

Board of County Commissioners
Betty Sue Morris, Chair — District 1
Marc Boldt — District 2
Steve Stuart— District 3

SECTION 1

Executive Summary

Executive Summary

The planning area for the Highway 99 Corridor Plan extends from NE 99th Street on the south to NE 129th Street on the north. The Conceptual Long-Term Improvements Plan developed as part of this process illustrates roadway improvements, access management strategies, and streetscape design options as a starting point for engineering design. The plan also illustrates potential changes to local street circulation. Plan objectives were:

- Develop a safe multimodal facility
- Improve mobility
- Define capital improvement needs
- Facilitate community input
- Enhance economic viability
- Facilitate redevelopment

The planning and policy background for the entire Highway 99 corridor includes:

- September 2000: Team 99 was formed to launch a revitalization effort for the corridor
- September 2001: Team 99 Corridor Study assisted by Riley Research Associates
- May 2002: Property/Business owner interview report completed by JD White Company
- April 2004: Highway 99 Focused Public Investment Area Action Plan
- May 2004: Walkable Communities Workshop
- In progress: Mixed use zoning overlay process

The concept plan was developed with review and input from County staff, Team 99, and a public outreach effort. County staff provided technical oversight and evaluation addressing potential property impacts and right-of-way acquisitions. Based on work completed by Otak and DKS Associates, county staff provided additional input on environmental impacts, water quality treatment and detention requirements, traffic analysis, conceptual access management, land use and redevelopment, existing franchise utilities (including the feasibility of placing overhead utilities underground), and construction costs.

The plan was also developed in coordination with the Klineline Bridge Replacement Project. Important areas of coordination were the assumed vehicle design speed, travel lane alignments and widths.

County Roadway Standards

The roadway standards used for the conceptual design were based on Clark County Unified Development Code "Street and Road Standards" and input from County staff. The standards are as follows:

- Street Classification – Four-lane Principal Arterial with center left turn lane (Pr-4cb).
- Design Speed –50 mph; posted speed 40 mph. Vertical alignment was analyzed using 50 mph. Striping for tapers and turning lanes for Highway 99 was based on 40 mph (posted speed) per WSDOT Standard Channelization plans dated December 15, 2004. Striping for tapers and turning lanes for NE 99th Street was based on 35 mph (posted speed).
- Taper and Left-Turn Storage Lengths – See Appendix A - Traffic Analysis.

Clear zone – 1.5 foot minimum between curb face and roadway objects per *AASHTO-Geometric Design of Highways and Streets*, 2004 edition.

Public Outreach

Public outreach with regard to revitalization of the corridor and improvements to Highway 99 has been on-going since 2000. Public involvement for this project included:

- Coordination with Team 99
- Outreach to residents, businesses and neighborhood associations
- Stakeholder work session
- Business and property owners
- Work session with the County Board of Commissioners

The first stakeholder work session was held July 7, 2005. Focused, small group discussions were set up to listen to concerns and stated preferences for overall character of this stretch of the roadway, as well as for recommended streetscape features.

Amenities with the greatest support were:

- Distinctive landscape elements
- Visually attractive to enhance future development
- Pedestrian-friendly improvements
- Additional street lighting
- Textured/colored pedestrian crosswalks
- Additional street trees

Potential improvements with the least support were:

- Access management using raised medians, with limited ingress and egress
- Roundabout at NE 119th Street intersection
- Multiuse pathways at selected locations

A second stakeholder work session was held on October 27, 2005. Participants reviewed the draft Long-Term Improvements Plan and provided additional comments both formally and informally. Participants were also given an opportunity to register for the project mailing list to receive information as this project moves into final design.

A work session with Team 99 was held on September 13, 2005 to review the draft plan and design options for sidewalks, street furnishings and pedestrian crossings. The draft plan was also reviewed at a Board of County Commissioners work session on October 12, 2005.

Conceptual Long-Term Improvements Plan

The plan is conceptual and subject to refinement during engineering. Design is expected to begin in early 2006. Additional contact and negotiation with affected property owners will be part of that process. The long-term plan identifies four types of potential improvements:

- Roadway , sidewalk, and bicycle lane improvements within the right-of-way
- Options for water quality treatment and detention outside of the right-of-way
- Circulation changes to local streets that intersect Highway 99

- Changes or additions to intersection improvements, especially 2 existing off-set intersections

Roadway improvements are consistent with Clark County standards for a 4-lane principal arterial with center medians and turn lanes (Pr-4cb). Design options were developed for sidewalk treatments and landscaped medians. With regard to multimodal safety, significant improvements include a center turn lane or raised medians, continuous sidewalks, new bike lanes, and potential to improve numerous pedestrian crossing locations. These same improvements will enhance the visual attractiveness of Highway 99.

A "tool kit" of design options for specific streetscape features was developed. The tools reflect input from stakeholders, Team 99 and County staff, as well as site constraints such as existing topography and utility poles. They are organized as design options for street edges, street corners, medians and pedestrian crossings for transit stops.

County redevelopment ordinances will require treatment and detention of stormwater. Analysis for water quality treatment identified four drainage basins within the corridor. Seven potential sites for stormwater detention facilities were evaluated. Conceptual cost estimates for these facilities were provided.

Potential local street circulation changes are linked to zoning, redevelopment and right-of-way improvements, as well as bringing intersections and traffic signals up to standards. The changes are anticipated to occur over time in three distinct areas. Potential benefits are:

- Support future redevelopment by accommodating the increased number of vehicle trips that could occur under current zoning
- Reduce the number of offset intersections along the highway
- Provide the County and new development with an adopted small area master plan for key circulation improvements

Cost Estimates

Estimates are planning level for capital improvements, right-of-way acquisition for roadway improvements and property acquisition of potential stormwater detention facilities. The significant increase from the most current estimate is due in part to including costs associated with improvements from NE 117th Street to NE 129th Street, additional stormwater collection requirements, and inflation. The following summary assumes 2005 dollars:

Construction (Base Cost)	**$9,825,000**
Undergrounding utilities (west side)	**$375,000**
Lighting	**$800,000**
25% Contingency:	**$2,800,000**
Subtotal for construction:	**$13,900,000**
Engineering and Permitting (15%):	**$ 2,100,000**
Construction Management (15%):	**$ 2,100,000**

Property Acquisition Roadway Improvements	**$5,210,000**
Property Acquisition Stormwater Facilities (Based on revised Western Washington Stormwater Manual)	
North Basin	**$500,000 - $2,500,000**
Central Basin	**$500,000 - $2,400,000**
South Basin	**$1,000,000 - $3,000,000**
Subtotals for Stormwater Facilities:	**$2,000,000 - $7,900,000**
Total Project Cost Estimate:	**$25,310,000 - $31,210,000**

Note: The range of property costs for stormwater facilities is based on range of alternatives for facility size and location pending determination of need and availability.

Schedule to Complete the Highway 99 Road Improvement Project

With completion of the concept corridor plan, the Highway 99 County road project will proceed over the next several years, subject to the current adopted TIP. Tentative project milestones are:

- Preliminary engineering from winter of 2006 through winter of 2008
- Environmental permitting from spring of 2006 through summer of 2009
- Right-of-way acquisitions 2008
- Construction tentatively 2011
- Klineline Bridge replacement from winter of 2005 to summer of 2007
- Public Participation – winter 2005 to end of project

SECTION 6

Conceptual Plan

Conceptual Long-Term Improvements Plan

The Long-Term Improvements Plan is conceptual. It was developed to provide opportunities for input from business and property owners along the corridor, provide preliminary cost estimates for improvements, and identify conceptual access management and design options as a starting point for preliminary engineering. The plan identifies four types of potential improvements:

- Roadway, sidewalk and bicycle lane improvements within the right-of-way
- Circulation changes to local streets that intersect the Highway 99 (see Traffic Analysis)
- Changes or additions to intersection improvements
- Options for water quality detention outside the right-of-way (see Environment and Drainage for analysis and alternatives)

Pre-engineering analysis for roadway standards and traffic analysis served as a conceptual basis for design (see Section 1). Proposed right-of-way improvements are consistent with Clark County standards for a 4-lane principal arterial with center raised medians and turn lanes as well as continuous sidewalks and bike lanes.

Primary roadway improvements will be resurfacing where the old concrete state highway is in place beneath the current roadway and new roadway sections on either side of the old concrete. New bike lanes and raised medians will be added. Medians will provide access management consistent with county standards and improve the overall safety of the corridor by reducing the number of vehicle to vehicle conflict points as well as conflict points with bicyclists and pedestrians. The extent and location of raised medians and potential pedestrian crossings will be refined during final design.

Pedestrian enhancements include continuous safe sidewalks with a minimum of five-foot clear space for walking, textured/colored crosswalks at signalized intersections and street trees for shade and pedestrian scale. Pedestrian-scale lighting for the sidewalks may be an option if a funding source is available. Clark County roadway improvement projects typically do not include street lighting costs.

Options for transit improvements are relocating some existing stops to locations where improved pedestrian crossings are available. Those locations would be at additional signalized intersections or pedestrian crossings where a landscaped median provides a momentary refuge. C-Tran stated a preference for bus stops without pull-outs.

Tool Kit of Design Features

A "tool kit" of design options for specific streetscape features was developed. The tools reflect input from stakeholders, Team 99 and County staff, as well as site constraints such as existing topography and utility poles. The design options are organized as follows:
Street Edges — Sidewalks, planter strips and street trees, and sidewalk furnishing zone for amenities such as lighting, bus shelters, benches and bike racks. Options were also developed for fully paved sidewalks (e.g. street trees in grates but no planter strip) and meandering walkways. The primary application of meandering walkways would be in areas where utility pole locations would unreasonably disrupt the minimum clear space for walking in a

sidewalk exactly parallel to the curb line. Where available right-of-way exceeds 100 feet, there is an opportunity for a double row of street trees.

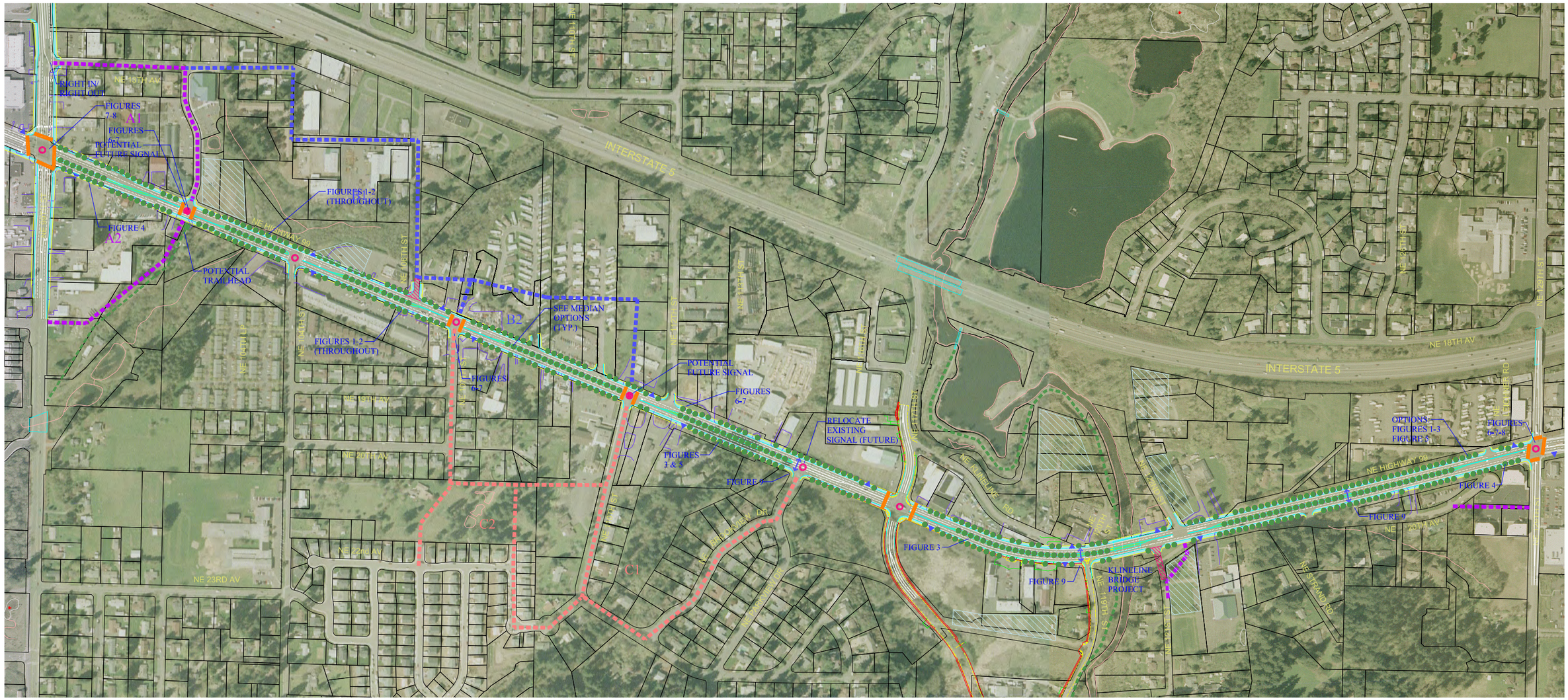
Different sidewalk treatments may be used along the length on the corridor. Factors to consider may be topography, utility easements and poles (if not placed underground), land uses, proximity to key street intersections and a desire for contrasts between more "urban" treatments and the standard arterial look.

Street Corners — Street corners can provide an accent point in the overall streetscape. The most important corners with respect to land use as well as pedestrian and transit activity are likely to be the signalized intersections. The design options suggest a fully paved sidewalk and furnishing zone (e.g. more urban) in combination with textured or colored crosswalks. Along with landscaped medians, these street corner treatments can visually suggest gateways for the corridor.

An overall streetscape design strategy might be to extend the fully paved treatment approximately 100 feet in each direction from the signalized intersections and transition to a sidewalk and planter strip treatment between intersections. This design strategy can create a sense of rhythm and variation for the streetscape. It will also provide good street frontage for future commercial or retail development at signalized intersections.

Raised Medians and Pedestrian Crossings for Transit — Median landscaping can be either leafy groundcovers or low growing shrubs. Grasses needing regular mowing and irrigation are not recommended. Street trees should be planted throughout at a minimum installation size of three-inch caliper. Where medians do occur, there may be opportunities to create non-signalized pedestrian crossings to access bus stops. The raised median can also be extended through the new Klineline Bridge as a fully paved median without street trees or landscaping.

With regard to multimodal safety, significant improvements will be a center turn lane or raised medians, continuous sidewalks, new bike lanes, and potential to improvement for pedestrian crossings. These same improvements will enhance the visual attractiveness of Highway 99.



HIGHWAY 99 CORRIDOR PLAN
CONCEPTUAL LONG TERM IMPROVEMENTS

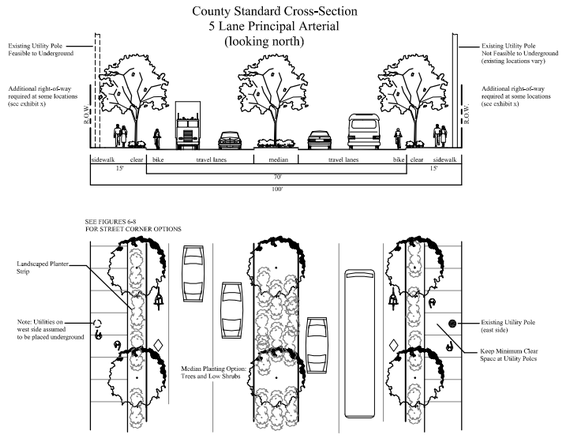
CLARK COUNTY
WASHINGTON
proud past, promising future

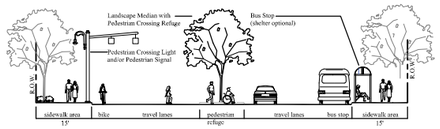
LEGEND

- *PROPOSED SIDEWALKS*
- *PROPOSED MEDIANS*
- *RECOMMENDED FUTURE STREET/ CIRCULATION IMPROVEMENTS*
- *STREET/INTERSECTION CLOSURES WITH REDEVELOPMENT*
- *PROPOSED DRAINAGE FACILITY*
- *POTENTIAL TRAILHEAD*
- *PLANNED TRAIL CONNECTIONS*
- *PEDESTRIAN CROSSING POINTS MEDIAN REFUGE*
- *EXISTING TRAFFIC SIGNALS*
- *FUTURE TRAFFIC SIGNALS*
- *BUS STOPS*

N.T.S.
NOVEMBER 9, 2005

otak
Incorporated
700 Washington Street, Suite 401
Vancouver, WA 98660-3220
Phone: (360) 737-9613
FAX: (360) 737-9651





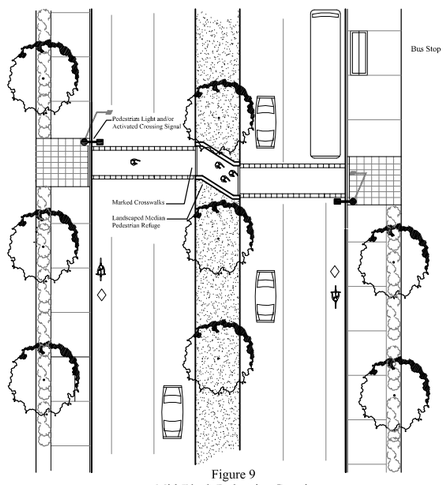
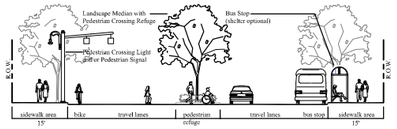


Figure 9
Mid-Block Pedestrian Crossing
Transit Stop



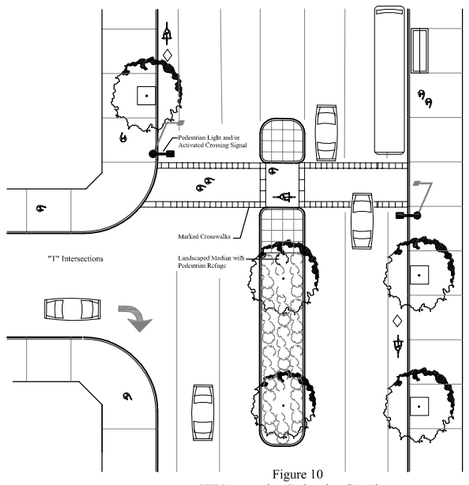


Figure 10
"T" Intersection Pedestrian Crossing
Transit Stop

CLARK COUNTY EXAMPLES

Mill Plain Boulevard

Mill Plain Boulevard

Fort Vancouver Way

Fort Vancouver Way

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CLARK COUNTY
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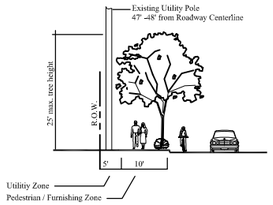
HIGHWAY 99 CORRIDOR PLAN
STREET DESIGN TOOL KIT
COUNTY STANDARD ROADWAY

otak
Incorporated
700 Washington Street, Suite 401
Vancouver, WA 98660-3220
Phone: (360) 737-9613
FAX: (360) 737-9651



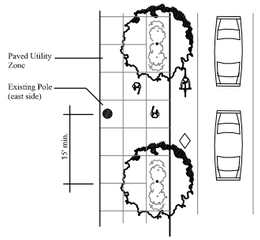
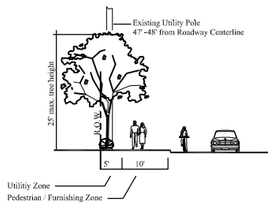


Figure 1
Intermittent Planter Strip
(at curb line)



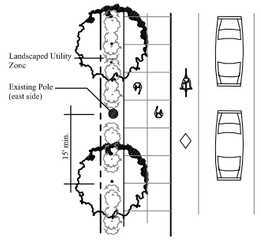
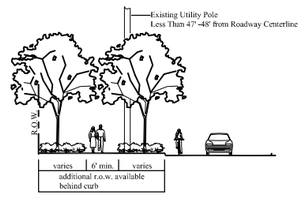


Figure 2
Continuous Planter Strip
(back of sidewalk)



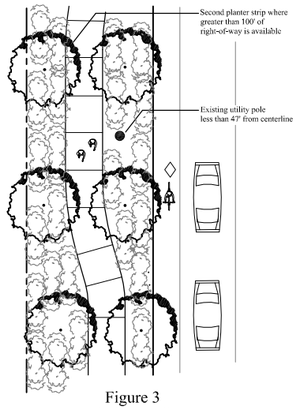


Figure 3
Meandering Walkway

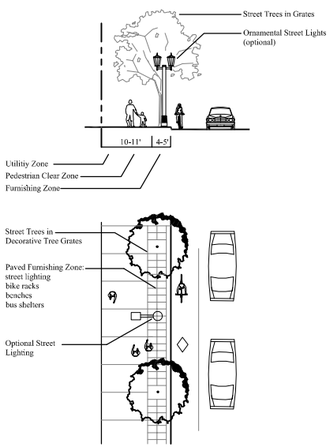


Figure 4
Sidewalk with Paved Furnishing Zone

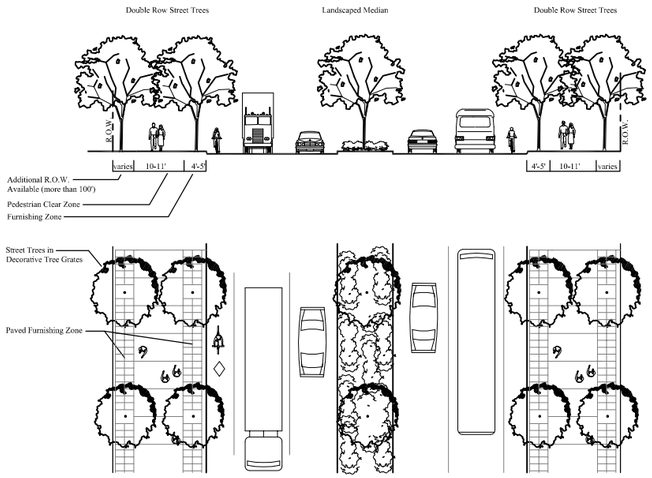


Figure 5
Double Row of Trees
(potential gateway treatments where additional r.o.w. is available)

SR-502
(West Main Street., Battle Ground)

NE 192nd Avenue

Columbia Street, Vancouver

Fourth Plain Boulevard

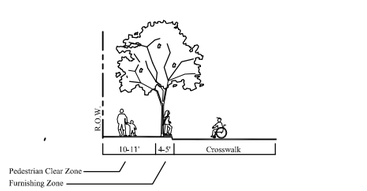
Covington Road

Fourth Plain Boulevard

proud past, promising future
CLARK COUNTY
WASHINGTON

HIGHWAY 99 CORRIDOR PLAN
STREET DESIGN TOOL KIT
STREET EDGES

otak
Incorporated
700 Washington Street, Suite 401
Vancouver, WA 98660-3220
Phone: (360) 737-9613
FAX: (360) 737-9651



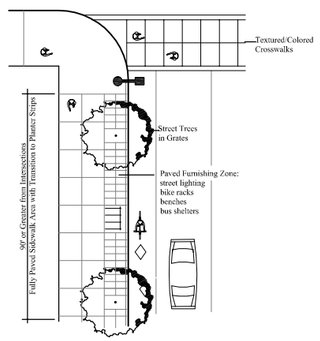
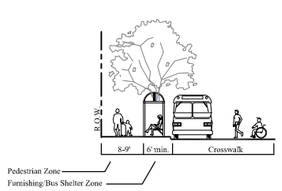


Figure 6
Street Corner Treatment
Paved Furnishing Zone



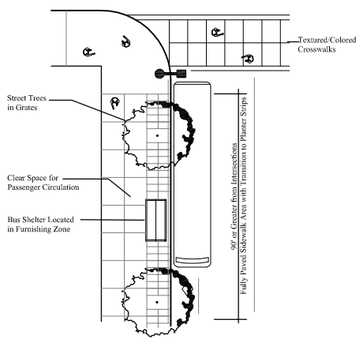
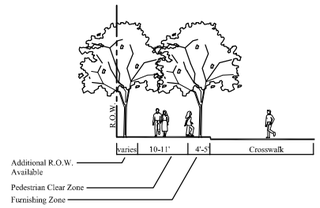


Figure 7
Street Corner Treatments
Bus Stop Locations



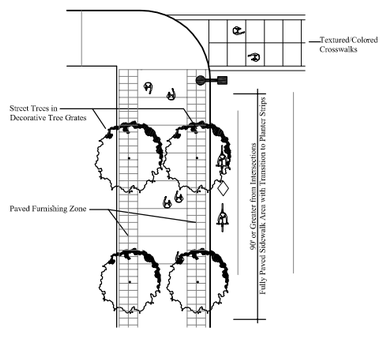
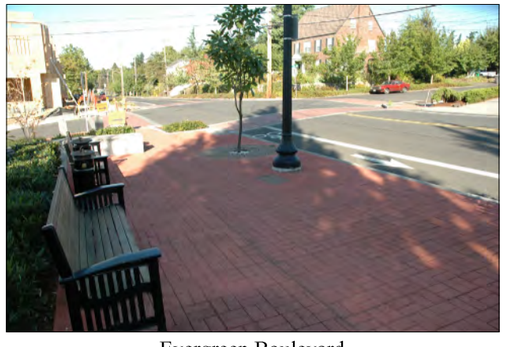


Figure 8
Street Corner with Double Row of Trees
(see figure 5 also)

NE 192nd Avenue



Evergreen Boulevard

Fourth Plain Boulevard

Fourth Plain Boulevard

otak Incorporated
700 Washington Street, Suite 401
Vancouver, WA 98660-3220
Phone: (360) 737-9613
FAX: (360) 737-9651